



(51) International Patent Classification:

C07K 1/36 (2006.01) *C07K 1/18* (2006.01)
C07K 1/30 (2006.01)

(21) International Application Number:

PCT/KR2014/004003

(22) International Filing Date:

7 May 2014 (07.05.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10-2013-0092024 2 August 2013 (02.08.2013) KR

(71) Applicant: **DAEWOONG CO., LTD.** [KR/KR]; 244,
Galmachi-ro, Jungwon-gu, Seongnam-si, Gyeonggi-do
462-807 (KR).

(72) Inventors: **KIM, Chung Sei**; 1221-903, Mokdong 12danji
Apt., 50, Mokdongdong-ro, Yangcheon-gu, Seoul 158-772
(KR). **SONG, Kwan Young**; 105-604, Dongbu centrel
vill, 42, Angok-ro 279beon-gil, Wonmi-gu, Bucheon-si,

Gyeonggi-do 420-100 (KR). **MIN, Kyoung Min**; 8,
Baengnyeong-ro 119beon-gil, Chuncheon-si, Gangwon-do
220-950 (KR). **AN, Yeong Duk**; 103-307, Baeng-
mongnyeon Apt., 21, Jeongnimseo-ro 138beon-gil, Seo-gu,
Daegu 302-770 (KR).

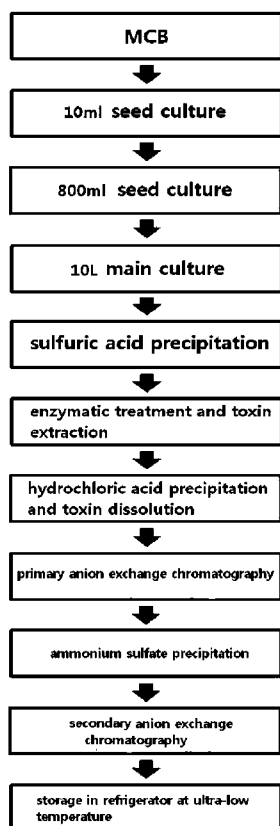
(74) Agents: **LEE, Cheo Young** et al.; 11F., Yeosam Bldg.,
123, Teheran-ro, Gangnam-gu, Seoul 135-748 (KR).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KZ,
LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METHOD FOR PRODUCTION OF BOTULINUM TOXIN



(57) Abstract: The present invention relates to a method for production of a botulinum toxin, and more particularly to a method for preparation of botulinum toxin, the method comprising the steps of: (a) treating a culture of a botulinum toxin-producing strain with acid to precipitate a botulinum toxin; (b) adding buffer to the precipitated botulinum toxin, followed by treatment with a protease inhibitor and nuclease, thereby extracting the botulinum toxin; (c) treating the extracted botulinum toxin with acid to precipitate the botulinum toxin and dissolving the precipitate in buffer; and (d) purifying the botulinum toxin by anion exchange chromatography. The use of the method of the invention makes it possible to produce a high-purity botulinum toxin by a simple process, suggesting that the method is very economical and efficient. The botulinum toxin produced by the method of the invention has high purity compared to botulinum toxins produced by conventional methods, and thus has an increased ability to act in a local area. Thus, the systemic circulation of the botulinum toxin, which can result in side effects, is reduced to increase the safety. Accordingly, the botulinum toxin of the invention can be used for various purposes, including treatment of neuromuscular disorders, removal of wrinkles, and treatment of spastic hemiplegia and cerebral palsy.



GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,

SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*